



12K5

POWER TETRODE

7-PIN MINIATURE, SPACE-CHARGE-GRID TYPE

*For use in automobile radio receivers operating directly
from 12-volt storage batteries***GENERAL DATA****Electrical:**Heater[•], for Unipotential Cathode:

Voltage range. . . . 10.0 to 15.9 dc volts

*This voltage range is on an absolute basis. For long-
est life, it is recommended that the heater be operated
within the voltage range of 11 to 14 volts.*

Current (Approx.)

at 12.6 volts. 0.4 amp

Characteristics, Class A₁ Amplifier with 12.6 Volts on Heater:

Plate Voltage.	12.6	volts
Grid-No.2 (Control-Grid) Voltage	-0.5	volt
Grid-No.1 (Space-Charge-Grid) Voltage.	12.6	volts
Plate Resistance (Approx.)	480	ohms
Amplification Factor, Grid No.2 to Plate.	7.2	
Transconductance, Grid No.2 to Plate	15000	μmhos
Plate Current.	40	ma
Grid-No.1 Current.	75	ma

Mechanical:

Operating Position Any

Maximum Overall Length 2-5/8"

Maximum Seated Length. 2-3/8"

Length, Base Seat to Bulb Top (Excluding tip) 2" ± 3/32"

Maximum Diameter 3/4"

Dimensional Outline. See General Section

Bulb T5-1/2

Base Small-Button Miniature 7-Pin (JETEC No.E7-1)

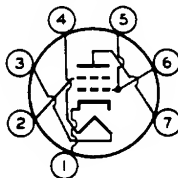
Basing Designation for BOTTOM VIEW 7FD

Pin 1 - Cathode

Pin 2 - Grid No.2

Pin 3 - Heater

Pin 4 - Heater



Pin 5 - Grid No.1

Pin 6 - Grid No.1

Pin 7 - Plate

AUDIO-DRIVER SERVICE**Maximum Ratings, Design-Center Values Except as Noted:**

PLATE VOLTAGE. 30 max. volts

GRID-No.2 (CONTROL-GRID) VOLTAGE:

Negative bias value. -20 max. volts

GRID-No.1 (SPACE-CHARGE-GRID) VOLTAGE

(Absolute maximum) 16[■] max. volts

PEAK HEATER-CATHODE VOLTAGE:

Heater negative with respect to cathode. 30 max. volts

Heater positive with respect to cathode. 30 max. volts

[•], [■]: See next page.

12K5



12K5

POWER TETRODE

Typical Operation with 12.6 Volts on Heater:

Plate Voltage.	12.6	volts
Grid-No.2 Voltage:		
Obtained by rectification through 2.2-		
megohm resistor.	-2	volts
Peak AF Grid-No.2 Voltage:		
Obtained from 100000-ohm source.	2.5	volts
Grid-No.1 Voltage.	12.6	volts
Zero-Signal Plate Current.	40	ma
Max.-Signal Plate Current.	8	ma
Grid-No.1 Current.	75	ma
Load Resistance.	800	ohms
Total Harmonic Distortion.	10	%
Max.-Signal Power Output	40	mw

Maximum Circuit Values:

Grid-No.2-Circuit Resistance	10 max.	megohms
--	---------	---------

- Operation of heater in series with other heaters is not recommended.
- Under no circumstances should this absolute value be exceeded.

OPERATING CONSIDERATIONS

The *maximum ratings* in the tabulated data for the 12K5, except the rating for grid-No.1 (space-charge-grid) voltage, are working design-center maximums established according to the standard design-center system of rating electron tubes. Tubes so rated will give satisfactory performance in storage-battery-operated equipment provided the following stipulations are observed:

In the case of storage-battery-with-charger supply or similar supplies, the normal battery-voltage fluctuation may be as much as 35 per cent or more. This fluctuation imposes severe operating conditions on tubes. Under these conditions, the equipment should be designed so that 90 per cent of the design-center maximum values of plate voltage, grid-No.2 voltage, plate dissipation, and grid-No.2 input is never exceeded for a battery-terminal potential of 13.2 volts. Although the operating voltages of the 12K5 in this service will, at times, exceed the design-center maximum values, satisfactory performance with probable sacrifice in life will be obtained.